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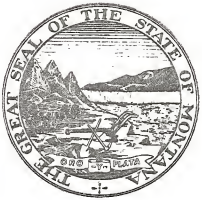
MONTANA CONSTITUTIONAL
CONVENTION

STATE DOCUMENTS

ANNUAL REPORT
OF THE
MONTANA
WATER RESOURCES
BOARD



TO THE
GOVERNOR OF MONTANA

Honorable Forrest H. Anderson

FOR THE
FISCAL YEAR ENDED
June 30, 1971

Douglas G. Smith — Director

MONTANA WATER RESOURCES BOARD
SAM W. MITCHELL BUILDING
HELENA, MONTANA
59601
GOVERNOR FORREST H. ANDERSON, CHAIRMAN

WILBUR WHITE, VICE CHAIRMAN AND SECRETARY, TWODOT
HOMER C. BAILEY, CORVALLIS
RILEY OSTBY, WOLF POINT

DOUGLAS G. SMITH, DIRECTOR, HELENA
EVERETT REDEEN, FORSYTH
JOSEPH B. REBER, HELENA

The Honorable Forrest H. Anderson
Governor
State of Montana
Helena, Montana 59601

Dear Governor Anderson:

In accordance with the requirements of Sections 82-4002, R. C. M. 1947, there is herewith transmitted to you the report of the Montana Water Resources Board covering the fiscal year ended June 30, 1971.

Major accomplishments of the Water Resources Board in that period included:

Repair and rehabilitation of existing structures - Water Resources Board Projects

Continuation of data gathering and research for State Water Plan

Improved personnel management procedures

Cooperated in regional water planning efforts

Continued county by county water resource surveys

Major recommendations:

A "must register" system for the groundwater code is urgently needed

Establishment of a personnel classification plan for all state employees

Authorization for the state to classify unused water rights as abandoned

Adoption by the Legislature of an objective standard to determine navigability of stream and ownership of stream bed

Respectfully submitted,

MONTANA WATER RESOURCES BOARD

Douglas G. Smith

Douglas G. Smith
Director

TABLE OF CONTENTS

Page

Table of Contents I

Principal Offices and Officers 1

Legal References 2

Principal Goals 4

Major Accomplishments 5

Major Recommendations 10

Program Descriptions & Performance Indicators 14

Program Cost Summary 28

Appendix 30

PRINCIPAL OFFICES AND OFFICERS

BOARD MEMBERS

Officer	Home Address
The Honorable Forrest H. Anderson Governor of Montana, Chairman	Governor's Mansion Helena, Montana
Wilbur "Pete" White, Vice Chairman	Twodot, Montana
Homer C. Bailey, Member	Corvallis, Montana
Riley Ostby, Member	Wolf Point, Montana
Everett Redeen, Member	Forsyth, Montana
Joseph B. Reber, Member	Helena, Montana

PRINCIPAL ADMINISTRATIVE OFFICERS

Douglas G. Smith, Director, Montana Water Resources Board
John E. Acord, Director, Planning Division, MWRB
Orrin Ferris, Director, Engineering Division, MWRB
Ronald J. Guse, Director, Water Resources Division, MWRB
Robert R. Jensen, Personnel Manager, MWRB
Donald Breiby, Chief Cartographer, MWRB
Thomas Harrison, Legal Counsel, MWRB
Johng Kim, Chief Accountant, MWRB
James Nybo, Economist, MWRB
Michael Schwinden, Public Information Director, MWRB

PRINCIPAL OFFICE BUILDING

Sam W. Mitchell Building
Helena, Montana 59601

Phone: 449-3634

LEGAL REFERENCES

GENERALLY

The statutes relating to the operations of the Montana Water Resources Board are, for the most part, contained in Title 89 of the Revised Codes of Montana, R.C.M., 1947.

In 1965 the State Water Conservation Board and the Office of the State Engineer, administrator of the Carey Land Act, were combined. In 1967 the legislature enacted the Montana Water Resources Act (Chapter 158, Laws of 1967) which redesignated the State Water Conservation Board as the Montana Water Resources Board. The act significantly expanded the state policy in the area of water resource development and utilization. The act also broadened and increased the powers and responsibilities of the board. In addition to its former responsibilities over a system of projects, the board is now responsible for: (1) preparing a continuing comprehensive inventory of the water resources within the state; (2) formulating and adopting a state water plan relating to the future use of the water resources within the state; (3) overseeing weather modification and control activities; and (4) assisting in the formation of conservancy districts, which are public corporations authorized by statute for the purpose of accomplishing water conservation and development on the county level as opposed to on a statewide basis.

The 1971 Legislature enacted a floodway management and regulation act which brings a vast new area of concern to the Montana Water Resources Board.

The activities of the Water Resources Board are governed by a board of seven members. Two of the members, the governor and the agency director, are members ex officio. The remaining five members are appointed for six-year terms by the governor with the consent of the Senate. The director, who is also appointed by the governor, is the chief administrative officer of the agency which, on June 30, 1971, had 72 employees.

The various functions of the board are primarily financed by appropriations from the General Fund. The board also utilizes earmarked moneys obtained mostly from water sales and loan repayments, as well as federal grant moneys.

Further detailed information concerning the specific duties and powers of the Board can be located in Sections 89-125 and 89-132.1.

PRINCIPAL GOALS

Recognizing that the water resources of the State of Montana should be put to optimum beneficial use, the Montana Water Resources Act of 1967 created the Montana Water Resources Board and outlined the following objectives:

1. The general welfare of the People of Montana requires that water resources of the state be put to optimum beneficial use and not wasted.
2. To promote the conservation, development and beneficial use of the state's water resources to secure maximum economic and social prosperity for its citizens.
3. Coordinate development and use of the water resources of the state so as to effect full utilization, conservation and protection of its water resources.
4. Develop and utilize water resources in order to protect existing uses and to assure adequate future supplies for domestic, industrial, agricultural and other beneficial uses.
5. Protect and conserve water resources of the state to assure adequate supplies for public recreational purposes and for the conservation of wildlife and aquatic life.
6. Construct, operate and maintain a system of works for the conservation, development, storage, distribution and utilization of water for the welfare and benefit of the people of the state.
7. Coordinate local, state and federal water resource development and utilization of plans and projects.
8. Secure the greatest economic benefit to the people of Montana by the sound coordination of development and utilization of water resources with the development and utilization of all other resources of the state.
9. Achieve these objectives and protect the waters of Montana from diversion to other areas of the nation by progressively formulating a comprehensive, coordinated multiple use water resource plan. (State Water Plan).

MAJOR ACCOMPLISHMENTS SUMMARIZED

PRIORITY	DESCRIPTION	
1.	Coordination of Federal, State and local groups active in water resources planning and development	Planning
2.	Repaired and improved Water Resources Board projects	Engineering
3.	Accelerated surface water right studies in the Yellowstone River Compact area	Water Resources
4.	New publications	Planning & Water Resources
5.	Conducted county water resources surveys	Water Resources
6.	Contracted feasibility studies	Planning
7.	Closed Trustee Accounts	Administration
8.	Informational meetings organized	Administration
9.	Microfilmed surface water rights	Water Resources
10.	Catalogued groundwater appropriations	Water Resources
11.	Continued cooperative groundwater studies	Water Resources
12.	Provided information on surface and groundwater rights as requested	Water Resources

MAJOR ACCOMPLISHMENTS DESCRIBED

1. FEDERAL, STATE & LOCAL PLANNING ACTIVITIES

Western U. S. Water Plan

This plan proposes to incorporate the state water plans of the eleven western states and other regional water planning efforts in a water plan for the Western United States. To help coordinate the timing of plan formulation, the Bureau of Reclamation has budgeted funds in the amount of $180,000 to assist Montana in development of the State Water Plan during the next three years.

Type IV River Basin Studies

Three agencies (Soil Conservation Service, Economic Research Service, Forest Service) of the U. S. Department of Agriculture are conducting a Type IV study on the Wind-Big Horn-Clark Fork River in cooperation with the States of Wyoming and Montana. Federal funding to the USDA this past fiscal year was approximately $60,000 for the Montana portion of the area. An application to the U. S. Department of Agriculture was made for initiating a Type IV study on the Clark Fork of the Columbia River in western Montana. This application was approved and the study will begin in fiscal year 1972. Two other applications were made for future studies - one on the Musselshell River Basin and another on the Tongue and Powder River Basins in Montana. (See Appendix C)

2. CONSTRUCTION ON BOARD PROJECTS

Nearly $360,000 was spent for repair and expansion of four M.W.R.B. irrigation projects: Sidney pumping project, Yellowater Reservoir, Daly Ditches, and the Tongue River Reservoir project.

3. YELLOWSTONE RIVER COMPACT

A water rights study on interstate streams (among North Dakota, Wyoming and Montana) was continued and accelerated. All of the area's surface water rights were put on microfilm. Administration of the terms of the Yellowstone River Compact is being strengthened because the water in southeastern Montana is growing in potential industrial value.

4. PUBLICATIONS

Inventory Series Reports

These reports make available all the information being accumulated in inventorying the water and related land resources of the State. Eleven reports have been published (3 during fiscal year 71) and distributed to those federal, state and local agencies or individuals having a need for them. Five additional reports are planned.

River Basin Modeling

A non-technical report was written to illustrate the use of mathematical computer modeling in water resources planning. Computer techniques provide methods of evaluating various courses of action in water resources development. These alternatives may then be weighed by the local people who must eventually make the decisions.

County Surveys

Field surveys have been conducted in 55 of the 56 counties of the State to record water rights and document the use of water on specific lands. Reports have been published on 47 counties to afford local interests use of this detailed information. Maps included in the reports are quite detailed, showing irrigated lands, potentially irrigable lands, points of diversion, structures, ditches, etc.

5. COUNTY BY COUNTY WATER RESOURCES SURVEYS

The county surveys are now 98 percent complete, although a workable updating system for the surveys is necessary to keep them current. The publications have proven invaluable to thousands of Montanans. (See Appendix D)

6. FEASIBILITY STUDIES

Conservancy Districts

Preliminary surveys have assembled all available data on the water and related land resources for the proposed North Central and East Central Conservancy District areas. The reports have analyzed the data and presented the local people some alternative solutions to local resource problems. (See Appendix E)

Desalting

This study will determine the alternatives in securing potable waters for municipal and industrial uses in Eastern Montana communities which depend largely upon brackish groundwater sources for their current water supply. This will demonstrate to those communities, means by which they can achieve water supplies which will meet the suggested standards established by the U. S. Public Health Service. (See Appendix F)

7. TRUSTEE ACCOUNTS

The M.W.R.B. trustee accounts were closed, many having been in existance since the 1930's. The annual savings from this action will be:

1) $998 in trustee fees
2) $1,000 additional earned interest for the state general fund
3) many man hours saved as a result of decreased paperwork

8. AREA MEETINGS HELD

In November, 1970, the Montana Water Resources Board scheduled a series of nine informational meetings at various locations in the state. These meetings, held in cooperation with the Montana Water Development Association and the Soil and Water Conservation Districts, were designed to inform the general public about matters pertaining to:

1. The Agency's organizational structure, objectives and current programs.
2. Legislative proposals.

Approximately 500 farmers and ranchers, legislators, government officials, educators and businessmen attended these meetings.

Personnel of the Water Resources Board felt that the Agency benefited from the meetings in several ways:

1. Its goals and objectives were explained to more than 500 citizens of the state.
2. It made agency personnel more cognizant of all program responsibilities of the agency.
3. Probably most important, Agency personnel learned what the general public thought should be priority programs and functions of the agency.

9. MICROFILMING OF SURFACE WATER RIGHTS

Presently 41 percent of the counties' records have been microfilmed compared to only 16 percent at this time last year. With the completion of this microfilming program, the state will have its first centralized file on all surface and groundwater rights.

10. CATALOGING OF GROUNDWATER APPROPRIATIONS

An awareness of the need to file on groundwater rights as well as an increase in the use of groundwater resulted in the cataloging of 12 percent more groundwater appropriations than were cataloged in the previous year. Several amendments were introduced and passed during the 1971 Legislative Session making the Montana Groundwater Code a better management tool.

11. COOPERATIVE GROUNDWATER STUDIES

The U. S. Geological Survey and the Water Resources Board cooperated in an effort to study all the major populated and problem areas in the state. The most significant study completed during the year was the Upper Blackfoot-Alice Creek groundwater study.

12. INFORMATION ON SURFACE AND GROUNDWATER RIGHTS

The Water Resources Board responded to requests for this information from not only farmers and ranchers in Montana, but also sources from numerous other states.

MAJOR RECOMMENDATIONS SUMMARIZED

PRIORITY	RECOMMENDATION	PROGRAM
1.	Strengthen surface and groundwater laws	Water Resources & Planning
2.	Enact law of abandonment regarding unused water rights	Water Resources & Planning
3.	Modify existing flood plain management law	Engineering
4.	Develop personnel classification plan for state employees	Administration
5.	Strengthen dam safety laws	Engineering
6.	Develop a standard for determining stream navigability	Planning
7.	Fund the position of Landscape Architect	Governor's Council on Natural Resources and Development

MAJOR RECOMMENDATIONS DESCRIBED

1. MODERNIZE SURFACE AND GROUNDWATER LAWS

Because of archaic and inadequate laws, Montana is far behind the other Western states in the area of ground and surface water rights. We recommended strengthening Montana's water laws in last year's annual report; however, appropriate legislative action was not taken.

To reserve our water for our own beneficial uses we must do two things: use the water and prove that we are using it. Montana cannot prove who is using her water or for what purpose. We have no way of requiring, with enforcement authority, people to file on water being used.

For our groundwater, we recommend a "must file" or "must register" system. This system would enable the state to determine groundwater availability and produce information for present and future planning needs. We further recommend that all filing procedures, from issuing the blank form to cataloging the final copy, be centralized in one place.

For our surface water, we recommend a "must register" system. Presently, the control over the use of surface water in Montana is in the hands of the district courts. We recommend large scale adjudication proceedings to solve the present water dilemma in the event laws are not passed which would enable the Water Resources Board to resolve the problem in court. In either case, action should be followed up by improved surface water laws in order to prevent the confusion from recurring all over again.

2. IMPLEMENTATION OF A LAW OF ABANDONMENT

At the present time nearly 3/4 of the water right filings which the Water Resources Board has on record are unused and unnecessary. A law of abandonment would allow the Water Resources Board to maintain a file on only those water rights which are in use.

3. MODIFY EXISTING FLOOD PLAIN MANAGEMENT LAW

In the past Legislative Session, House Bill 265 was enacted and entered in Chapter 35 of Title 89 R.C.M., 1947. This is an act relating to management and regulation of the floodways of watercourses for the entire State of Montana for all drainages of 25 square miles or larger. Floodways are to be delineated for floods having a 50-year frequency (flood levels that would be expected to have a 2% chance of occurring in any given year). It would be desirable to change this requirement to a 100-year frequency storm (a storm which has a 1% chance of occurring in any given year) for the following reasons:

A. The 100-year frequency is more common nationwide, in studies made by the Corps of Engineers and others.

B. The Federal Flood Insurance Program administered by HUD is based on a 100-year frequency flood.

C. In most cases, the 100-year frequency flood would produce a flood stage only slightly higher than the 50-year flood stage.

In studies currently underway, the Montana Water Resources Board plans to provide delineations of floodways for both 50 and 100-year frequency storms. This is being done in the hope that local governmental groups will zone flood plains based on 100 year lines. If they do not choose to do so the State does have capability under the act to zone delineated areas in the 50-year frequency zone. A community or county with this type of zoning would not be eligible for the regular Flood Insurance Program.

4. DEVELOP A PERSONNEL CLASSIFICATION PLAN

A wage and salary plan and a personnel classification plan should be developed for state employees. These plans must be implemented if agencies are to utilize and develop in full measure the talents and ability of each employee. An effective personnel management program requires this as a prerequisite.

5. STRENGTHEN DAM SAFETY LAWS

Current legislation gives the State very limited authority in the area of protection from potentially unsafe dams and reservoirs. Current authority only permits the State to be involved if a structure is in fact in danger.

It would be desirable to pass an act that would provide for state inspection, regulation and supervision of dams and reservoirs for safety purposes. This would help insure that storage structures are properly designed, constructed and operated throughout their lives, without posing a threat to life and property.

6. DEVELOP A STANDARD FOR DETERMINING STREAM NAVIGABILITY

To ensure future management of many Montana streams and rivers it is necessary to determine which waterways are navigable. The determination of stream navigability and ownership of the stream bed will also prevent much water degradation caused by unwise agricultural practices of riparian landowners, and will provide for public access to those streams.

7. FUND THE POSITION OF LANDSCAPE ARCHITECT

For accounting purposes and overall efficiency the position of Landscape Architect should be budgeted and placed in the new Department of Natural Resources and Conservation.

PROGRAM DESCRIPTIONS

PROGRAM - Administration

GOAL

Provide increased efficiency in administration operations.

OBJECTIVES

Maintain an effective personnel management program; update and provide for more efficient fiscal procedures; apply economic theory in areas of water project management; and ensure public awareness of development in the Water Resources field.

ACHIEVEMENTS

The 8 percent merit budget available to the Director was used with discretion and success. Merit increases were made on the basis of thorough performance evaluations.

To ensure sound personnel managements efforts -- training records, wage data, personnel information, work history, and job evaluations were kept and updated for each employee.

An increased emphasis has been given to rational project management by the use of economic theory and analysis.

A concerted effort has been made to inform the public of important water management programs through area meetings, slide presentations, speeches, and a quarterly newsletter.

PERFORMANCE INDICATORS

Factor	Quantity	Trend
Job descriptions established	65	Fairly stable
Performance evaluations completed	65	Fluctuates according to number of personnel
Newsletters printed	4	Stable
Informational meetings held	9	Increasing

PROGRAM - Engineering

GOALS

Provide accurate professional assistance to all other programs of M.W.R.B. and engineering services to Water Users' Associations who use water from M.W.R.B. projects. Coordinate the Flood Plain Management Program and provide stream and canal measurement data for the State water planning effort.

OBJECTIVES

Supply quality assistance to existing M.W.R.B. projects in the operation, maintenance, replacement and reorganization of those projects; promote new water development projects; establish State guidelines for use in the Flood Management Program; and develop data needed for the institution of the dam safety law.

ACHIEVEMENTS

Construction work began on the reorganization of the Sidney project. The Montana Water Resources Board signed two contracts for the work, totaling $1,176,523.10. On June 30, 1971, 24.6% of the work was complete. A total of $650,000.00 of State funds are involved, $250,000.00 from a State appropriation and $400,000.00 through a FHA loan.* The project consists of building three pumping stations on the Yellowstone River and four additional relift stations on the project. Considerable canal construction and lining is also being accomplished.

Two wooden flumes are being replaced by siphons on the Columbus Water Users' Association project. Coordination work between the Water Users and the Resource Conservation and Development group under the direction of the Soil Conservation Service, has been carried out by the Montana Water Resources Board. The Board will be the contracting agency on the project, which will go into construction in fiscal year 1972. The estimated price range for the project is from $100,000.00 to $150,000.00. Fifty percent of the cost will be in grant through the RC & D program and fifty percent will be State money used to improve the project.

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*All State funds spent on Water Users' Association projects are repaid through repayment contracts between the Associations and the Water Resources Board.

Two water control structures were replaced on the Water Board owned Daly Ditches system near Hamilton, Montana. Two separate contracts were signed for construction of the structures totaling $48,396.84. Fifty percent of the funds were supplied as a grant from the Bitterroot Resource Conservation and Development program, administered by the SCS. Other funds were supplied from the State appropriation. Two additional structures were planned during the year for construction in fiscal year 1972. (See Appendix H)

The Montana Water Resources Board, through its Hydrography Section, is maintaining 51 stream flow stations, primarily in canal diversions throughout the irrigation season. The Board has continued its cooperative program with the U. S. Geological Survey, providing 50% of the cost-sharing on 72 full and partial support stations for measuring stream flow and 25 locations for recording lake levels. The cooperative program was funded by the State in the amount $61,295.00. (See Appendix G)

The construction program of the M.W.R.B. was significantly changed during fiscal year 1971. Major maintenance or construction will no longer be done by M.W.R.B. forces. All such work will be contracted from private industry. Only a skeleton maintenance force remains for minor maintenance work on M.W.R.B. projects, hydrography stations, and recreational areas. This crew is headquartered at Hamilton in conjunction with the field shop that serves the Daly Ditch System, which M.W.R.B. owns and operates. A sale was conducted on what remained at Shawmut (former field crew headquarters and shop) and was no longer needed by M.W.R.B.

A Flood Plain Management law was signed on March 15, 1971, which became effective July 1, 1971. This Bill is recorded in Chapter 35 of Title 89, R.C.M., 1947. Work was initiated in fiscal year 1971 to prepare us for administration of the Bill.

PERFORMANCE INDICATORS

Factor	Quantity	Trend
1. Major construction projects	4	Increasing
2. Flood plain zoning studies conducted	0	Should increase rapidly

PROGRAM - Water Resources

GOALS

Protect and utilize surface and groundwater for the greatest benefit of all Montanans.

OBJECTIVES

Develop a complete and current inventory system of all surface and groundwater rights that can be utilized and administered properly.

ACHIEVEMENTS

During fiscal year 1971, the county Water Resources Surveys were completed and reports published for the counties: Prairie, Dawson, and Richland. Water resources field surveys were completed in seven counties: McCone, Garfield, Petroleum, Fergus, Roosevelt, Daniels, and Sheridan. Beaverhead is the only county in the State which has not been completely surveyed at least once. Presently forty counties are available in published form, eight counties are out-of-print and eight counties remain to be published. (See Appendix D)

In order to update and modernize the surface water rights system, microfilm equipment was purchased and water rights records of the following counties were microfilmed: Beaverhead, Garfield, McCone, Richland, Roosevelt, Sheridan, Daniels, Valley, Blaine, Phillips, Hill, Carbon, Yellowstone, Big Horn, Treasure, Rosebud, Powder River, Custer, Carter, Fallon, Prairie, Wibaux, and Dawson. Eventually all surface and groundwater rights in Montana will be available on microfilm.

Data gathering and compilation of surface water rights were accelerated in the Yellowstone River Basin as a result of the growing need for industrial water for coal development. Most of the work is being done in conjunction with the Yellowstone River Compact and related Montana water laws.

The county by county groundwater inventory was continued and the counties of Dawson, McCone and Richland were completed.

Approximately 1,400 new groundwater appropriations were received and catalogued.

Numerous (30-40 per month) inquiries were answered pertaining to surface and groundwater rights and appropriation procedures, both from within Montana and out-of-state.

The Board continued to administer the South Pine Controlled Groundwater Area, the only controlled groundwater area in the State, which was established on November 1, 1967. An Order, issued by the Board in 1970, has been challenged, sending the final decision to the District Court in Miles City.

A new pamphlet entitled, "Appropriation and Regulation of Groundwater," has been prepared and is available upon request. The pamphlet includes the added and amended portions of Montana's Groundwater Code as passed by the 1971 Legislative Assembly.

Similar pamphlets, also available upon request, have been prepared on the "Yellowstone River Compact," and "Weather Modification Activities."

The Upper Blackfoot - Alice Creek Groundwater Study has been completed and is scheduled for publication this winter. The study was brought on by Anaconda Company's proposed Heddleston Mining District near Lincoln, Montana, and was funded under a cooperative 50/50 matching program with the U. S. Geological Survey.

Groundwater studies are in the preliminary stages for the Rock Creek and Missoula Basin areas. The studies will focus primarily on data collection, prevention of groundwater problems, and groundwater administration.

A $165,000 grant was received from the Bureau of Reclamation for a weather modification study. The study was begun in 1971, by Montana State University, and will be completed in 1973. The M.W.R.B. decided to begin requiring permits from groups involved in weather modification programs.

PERFORMANCE INDICATORS

Factor	Quantity	Trend
Microfilming in counties	14	Increasing
Groundwater Studies	1	Increasing

Factor	Quantity	Trend
County Field Surveys	7	Will decrease - all but one county has been surveyed
County Field Resurveys	0	Will increase - using new survey techniques which are faster and more efficient

PROGRAM - Planning

GOALS

Gather and publish an inventory of water and related land resources in the State of Montana. Develop economic, administrative and management patterns for the state's water resources and outline future methods of operation. Survey present water and land use to determine present water needs and project future demands based upon an evaluation of soils, topography, and irrigation practices as well as municipal, industrial, rural, and urban needs for the future. Make recommendations based upon these projections and, where possible, implement the necessary measures for the well-being and benefit of the people of Montana.

OBJECTIVES

Formulate and adopt a comprehensive, coordinated multiple use water resources plan which will set out a progressive program for the conservation; development and utilization of the State's water resources; propose the most effective means by which these water resources may be applied for the benefit of the people, with due consideration of alternative uses.

ACHIEVEMENTS

Computer Data Bank enlarged with addition of Bitterroot-Clark Fork Simulation Model and the North-Central Conservancy District Linear Programming Optimization Model.

Montana Economic Study completed by Bureau of Business and Economic Research - supported by M.W.R.B. and D.P.E.D. Will provide baseline for projections to be used in developing the state water plan.

Two preliminary feasibility studies completed for proposed Conservancy Districts, the North-Central encompassing 9 counties and two major drainages, and the East-Central composed of parts of 4 counties and two minor drainages plus Fort Peck.

Desalting Feasibility Study initiated November 11, 1970, in cooperation with the Office of Saline Water, U. S. Department of the Interior, to determine feasibility of desalting brackish water supplies in eastern Montana communities.

Type IV River Basin Study continued on the Stillwater, Clarks Fork, Bighorn River Basins in cooperation with the U. S. Department of Agriculture and the State of Wyoming. An additional study authorized to start in the 1972 Fiscal Year, to cover the Clark Fork of the Columbia River Basin.

Initiated coordination for State participation in the Western U. S. Water Plan Study being conducted by the Bureau of Reclamation.

Public hearing on January 30, 1971, to present Inventory Series Reports published to that time for the State Water Plan before formal adoption of the reports by the Board.

Land classification field work - 48 counties - 85% of state completed

Land classification tabulation - 44 counties - 79% completed

Land classification data computerized - 17 counties - 31% completed

Inventory Series Reports Published:

No. 1	Directory of State of Montana, Federal Agencies, and Private Groups Active in the General Field of Water Resources (Revised)
No. 11	An Atlas of Water Resources in Montana by Hydrologic Basins
No. 12	Montana's State Water Plan - A Progress Report - July 1, 1967 to December 31, 1970

Other Publications

"River Basin Modeling - An Approach to Computer Simulation of the Bitterroot - Clark Fork River Basin"

PERFORMANCE INDICATORS

Factor	Quantity	Trend
Inventory Series Reports published	3	Varies
Feasibility studies	3	Increasing

PROGRAM - River Basins Commission

GOALS

Provide accurate information collection and planning of water and related land resources for each river basin region.

OBJECTIVES

Plan for the optimum development and utilization of the region's water and related land resources to assure the greatest benefit to the people of the region and the Nation.

ACHIEVEMENTS

PACIFIC NORTHWEST RIVER BASINS COMMISSION

1. Completed subregional water and related land resources framework plans.
2. Initiated development of the framework plan for the entire Columbia-North Pacific region.
3. Prepared Priorities Report for Congressional information and action. This lists projects, planning activities, and studies needed for the development and utilization of the region's water resources for each state included in the Commission area.
4. Determined problem areas where Level B studies are required to achieve planning goals outlined in the Western U.S. Water Plan. The Flathead River Basin is such an area in Montana and will be studied through a cooperative effort of State and Federal agencies involved in PNWRBC.
5. Attended all Commission meetings and participated in committee work groups.

MISSOURI BASIN INTER-AGENCY COMMITTEE

1. Made reviews of drafts of several appendices and the framework plans for the Missouri River Basin preparatory to final publication.
2. Attended all Committee meetings and participated in study work groups.
3. Actively supported and encouraged formation of a Missouri River Basin Commission to supplant MBIAC and assure more state control of the planning activities for the Missouri River.

WESTERN STATES WATER COUNCIL

1. Attended all meetings of the Council and its committees.
2. Montana Water Resources Board Director served as chairman of the Council's Water Resources Committee.
3. Prepared position statement for Governor on implementation of the Refuse Act of 1899 and its federal permit requirements.
4. Established subcommittee of the Water Resources Committee to develop Environmental Policy Statement for the Council.
5. Prepared testimony concerning national legislation involved with water resources.

PROGRAM DESCRIPTIONS

PROGRAM - Governor's Council on Natural Resources and Development

GOAL

Provide effective development, conservation and protection of the State's natural resources.

OBJECTIVES

Gather pertinent information, conduct studies and draft unified proposals, endorsements, and recommendations on matters which require the Governor's attention.

Eliminate the duplication of overlapping responsibilities giving primary consideration to mutual adminstrative duties and problems, legislative needs and assessment of priorities.

ACHIEVEMENTS

CLARKS FORK SILTATION STUDY

Studied sedimentation problem in the Clarks Fork of the Yellowstone. The Council is in the process of drafting a final report to the 43rd Legislative Assembly which will include the source, extent and potential solutions of the sedimentation problem.

DRAFTING OF NEW LEGISLATION

Assisted in drafting the water pollution control bills and the mined land reclamation bills; reviewed the proposed legislative amendments to the modern water code.

COAL AND WATER REPORT

During the period of this report the Montana Water Resources Board has given coal and water reports at each meeting of the Council for informational purposes.

The coal and water reports have centered primarily around the developments of the vast coal resources in the Yellowstone River Compact area located in southeastern Montana.

MISSOURI BREAKS SCENIC RIVER BILL

Responding to a request from the Governor, the Council initiated a formal examination of the Missouri Breaks Scenic River Bill. Public hearings were held at Great Falls, Lewistown, and Helena in an effort to determine alternatives to the proposed bill.

SMITH RIVER STUDY

During the past year, the Council concluded a study of the Smith River as requested by a resolution of the 41st Legislative Assembly. This study was a cooperative effort by many agencies within the Council.

The study looked into both the environmental and economic aspects of developing the Smith River into a state park. It produced a number of recommendations which were in turn presented to the 42nd Montana Legislative Assembly.

Some of their recommendations which requested specific legislation resulted in bills introduced. None of these bills attained passage during the legislative session. Other recommendations made to various agencies of both State and Federal government are now being implemented to the degree possible by those agencies.

1899 REFUSE PERMIT POSITION PAPER

Prepared a position paper recommending the governors in the Western States Water Council to oppose implementation of the federal water permit program in those states which have effective water quality control programs.

LANDSCAPE ARCHITECT

Provided professional landscape architectural services including: environmental consultation, contract preparation, sketching and rendering, master site planning, and interpretation of natural and historic sites for all State agencies and the Governor's office.

PERFORMANCE INDICATORS

Factor	Quantity	Trend
Landscape architect projects for:		
Montana Water Resources Board	5	Increasing moderately
Fish and Game Department	22	Increasing
Highway Department	3	Decreasing
Department of Institutions	2	Decreasing
Department of Administration	7	Increasing rapidly
State Conservation Commission	1	Fairly stable
Department of Planning & Economic Development	1	Stable
Council on Natural Resources	3	Stable

MONTANA WATER RESOURCES BOARD

PROGRAM COST SUMMARY

	Fiscal Year Cost		
PROGRAM	1970-1971	1969-1970	INCREASE
Administration	$ 181,997.72	$ 151,130.95	$ 30,866.77 (1)
Engineering	601,568.11	61,016.36	312,167.99 (2)
Field		129,731.88-)-a	
Hydrography		98,651.88-	
Water Resources	260,985.43	256,130.28	4,855.15
Ground Water	34,718.02	33,025.96	1,692.06
Planning	275,232.31	224,296.77	50,935.54 (3)
River Basins Commission	37,329.86	20,415.45	16,914.41 (4)
Council on Natural Resources and Development	32,260.35	13,021.97	19,238.38 (5)
TOTAL	$ 1,424,091.80	$ 987,421.50	$ 436,670.30

(1) Increased present salaries; added new positions; reorganized administrative division.

(2) Engineering contracted services increased $354,117.60 (See Appendix A).
   (a) Field and Hydrography programs were merged into Engineering program in FY 1971.

(3) Four issues of the State Water Plan Inventory Series were published; two preliminary feasibility studies on proposed Conservancy Districts were completed and desalting study was conducted with federal grant. (See Appendix B).

(4) Annual State fee of $30,000 to Pacific Northwest River Basins Commission taken out of Field Program in fiscal year 70 and transferred to River Basins Commission in fiscal year 71.

(5) The 1970 fiscal year expenses reflect program cost for 5 months as opposed to a full year in fiscal year 1971.

PROGRAM COST DETAIL

PROGRAM	1970-1971 FY Total	Personal Services	Operating Expenses	Capital	Grant
Administration	$ 181,997.72	$119,283.11	$ 56,477.40	$ 5,237.21	$ 1,000.00
Engineering	601,568.11	139,958.89	425,206.35	10,888.71	25,514.16
Water Resources	260,985.43	175,027.56	85,544.27	413.60	
Ground Water	34,718.02	22,285.48	11,983.18	449.36	
Planning	275,232.31	73,058.78	171,831.07	2,426.62	27,915.84
River Basins Commission	37,329.86		37,329.86		
Council on Natural Resources and Development	32,260.35	27,604.89	4,655.46		
TOTAL	$1,424,091.80	$557,218.71	$793,027.59	$19,415.50	$54,430.00

SOURCES OF FUNDING

General Fund		$1,076,109.31
Earmarked Revenue Fund		152,056.03
Federal & Private Revenue Fund		
89-80 Grant	$109,236.11	
State Agency's Contribution	32,260.35	
Federal Matching Fund from Soil Conservation Service	24,198.42	
Federal Matching Fund from Office of Saline Water	27,915.84	
Total		193,610.72
Federal & Private Clearing Account		1,315.74
Agency Account for Employee Training		1,000.00
TOTAL FUNDING		$1,424,091.80

APPENDIX A

PROGRAM COSTS - ENGINEERING

	FY 71	FY 70	
Supplies & Materials	$ 4,593.88	$ 11,497.74	$ (6,903.86)
Communications	3,038.26	3,024.05	14.21
Utilities	585.12	910.94	(325.82)
Travel	22,842.63	22,132.90	709.73
*Contracted Services	358,376.53	94,932.09	263,444.44
Special fees	298.27	82.44	215.83
Equipment Maintenance	35,471.66	4,327.06	31,144.60
TOTAL	$425,206.35	$136,907.22	$288,299.13

*CONTRACTED SERVICES

$ 23,607.65	Hedge - Skalkaho & Republican Structure at Hamilton, Montana
42,056.00	Conservancy District Preliminary Study by HDR
7,379.26	Conservancy District Preliminary Study by TAP, Inc.
14,800.00	Nilan Water Users' Association
58,295.00	U. S. Geological Survey
202,751.69	Sidney Pumping Project
9,486.93	Miscellaneous
$358,376.53	TOTAL

APPENDIX B

PROGRAM COSTS - PLANNING

	FY 71	FY 70	Increase or (Decrease)	
Supplies	$ 30,234.99	$ 15,228.95	$15,006.04	(1)
Communication	2,547.80	1,617.65	930.15	
Travel	8,982.15	12,760.20	(3,778.05)	
*Contracted Services	122,228.20	79,110.98	43,177.22	(2)
Special Fees	6,955.00	28,099.73	(21,144.73)	
Maintenance	882.93	1,222.49	(339.56)	
Equipment	2,426.62	4,847.73	(2,421.11)	
Grant	27,915.84		27,915.84	(3)
TOTAL	$202,173.53	$142,887.73	$59,285.80	

(1) Supplies: Various publications

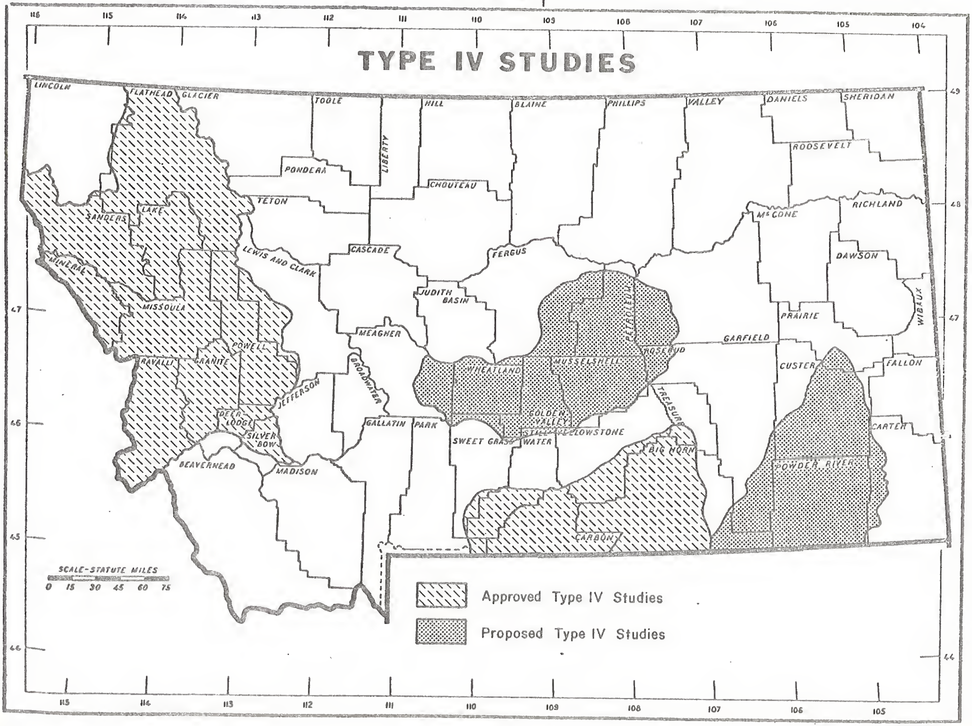
*(2) Major Contracted Services:

$ 5,000.00	File management system (Dept. of Planning & Economic Development)
20,964.00	H.D.R. (Feasibility Study)
51,718.74	TAP, Inc. (Feasibility Study)
15,000.00	Fish Hatchery, Fish & Game
16,000.00	M.S.U. - Computer Modeling
1,596.00	Prorated Charge
8,568.88	Nevada Desert Research Institute (Bitterroot Valley Computer Model)
3,380.58	Minor Contracted Services
$122,228.20	TOTAL

(3) Grant

$ 27,915.84	Control System Research, Inc. for Desalting Studies - from Office of Saline Water

MONTANA


TYPE IV STUDIES
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115
114
113
112
111
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109
108
107
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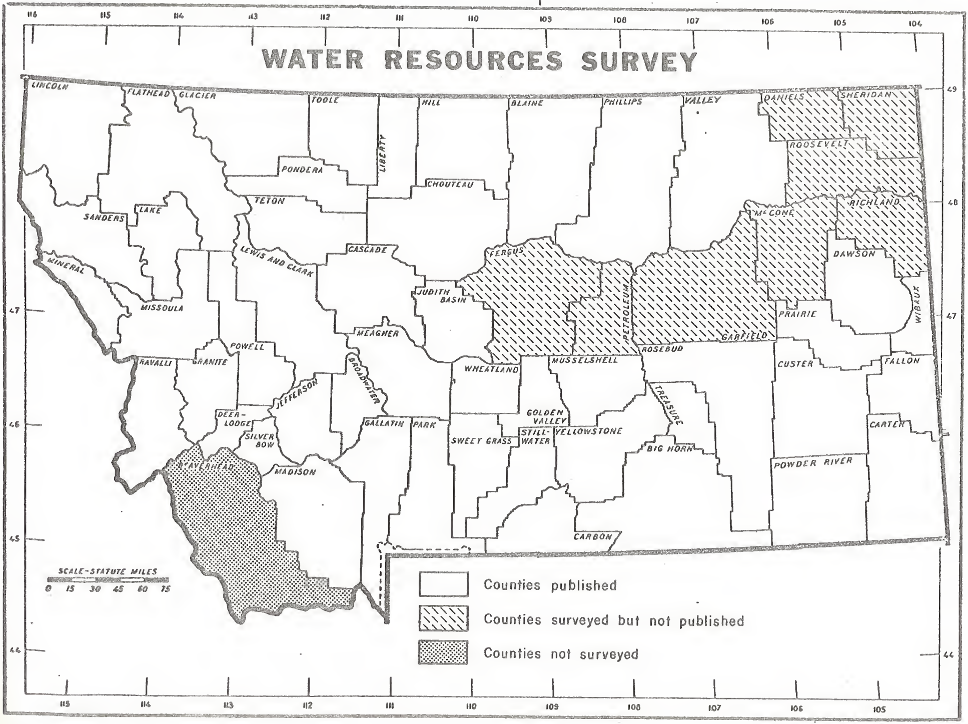
105
104
49
48
47
46
45
44
LINCOLN
FLATHEAD
GLACIER
TOOLE
LIBERTY
HILL
BLAINE
PHILLIPS
VALLEY
DANIELS
SHERIDAN
ROOSEVELT
PONDERA
CHOUTEAU
TETON
SANDERS
LAKE
McCONE
RICHLAND
LEWIS AND CLARK
CASCADE
FERGUS
DAWSON
MINERAL
JUDITH BASIN
PETROLEUM
WIBAUX
MISSOULA
PRAIRIE
MEAGHER
GARFIELD
POWELL
ROSEBUD
RAVALLI
GRANITE
WHEATLAND
MUSSELSHELL
CUSTER
FALLON
BROADWATER
JEFFERSON
TREASURE
GOLDEN VALLEY
DEER LODGE
GALLATIN
PARK
CARTER
SILVER BOW
SWEET GRASS
STILLWATER
YELLOWSTONE
BIG HORN
BEAVERHEAD
MADISON
POWDER RIVER
CARBON
SCALE-STATUTE MILES
0 15 30 45 60 75
▨ Approved Type IV Studies
▩ Proposed Type IV Studies

MONTANA


WATER RESOURCES SURVEY
LINCOLN
FLATHEAD
GLACIER
TOOLE
HILL
BLAINE
PHILLIPS
VALLEY
DANIELS
SHERIDAN
ROOSEVELT
LIBERTY
PONDERA
CHOUTEAU
TETON
SANDERS
LAKE
RICHLAND
MC CONE
CASCADE
LEWIS AND CLARK
FERGUS
DAWSON
MINERAL
JUDITH BASIN
PETROLEUM
MISSOULA
PRAIRIE
WIBAUX
MEAGHER
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RAVALLI
GRANITE
BROADWATER
WHEATLAND
MUSSELSHELL
CUSTER
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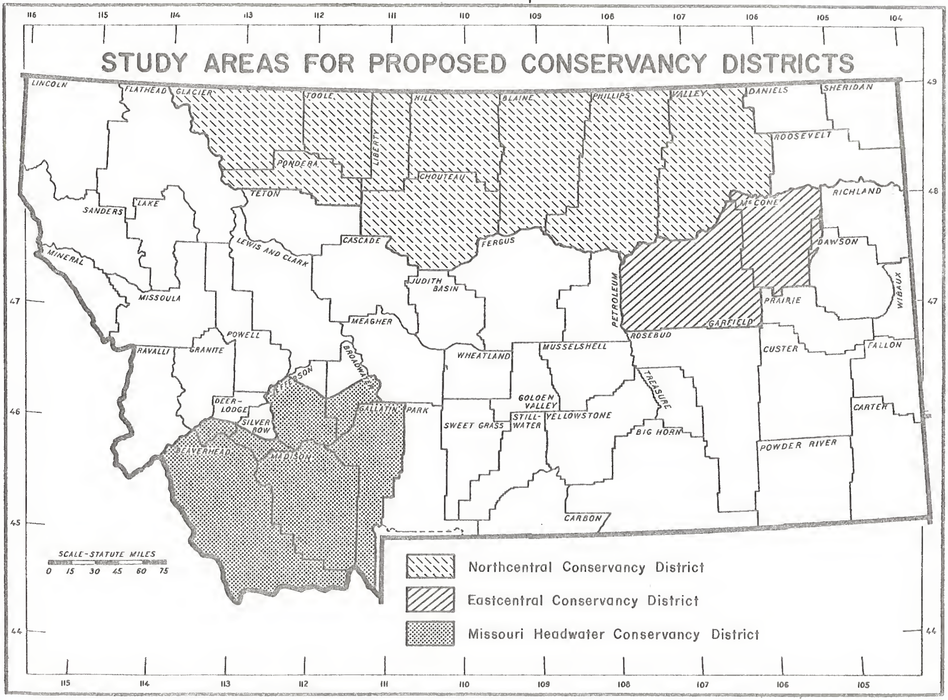
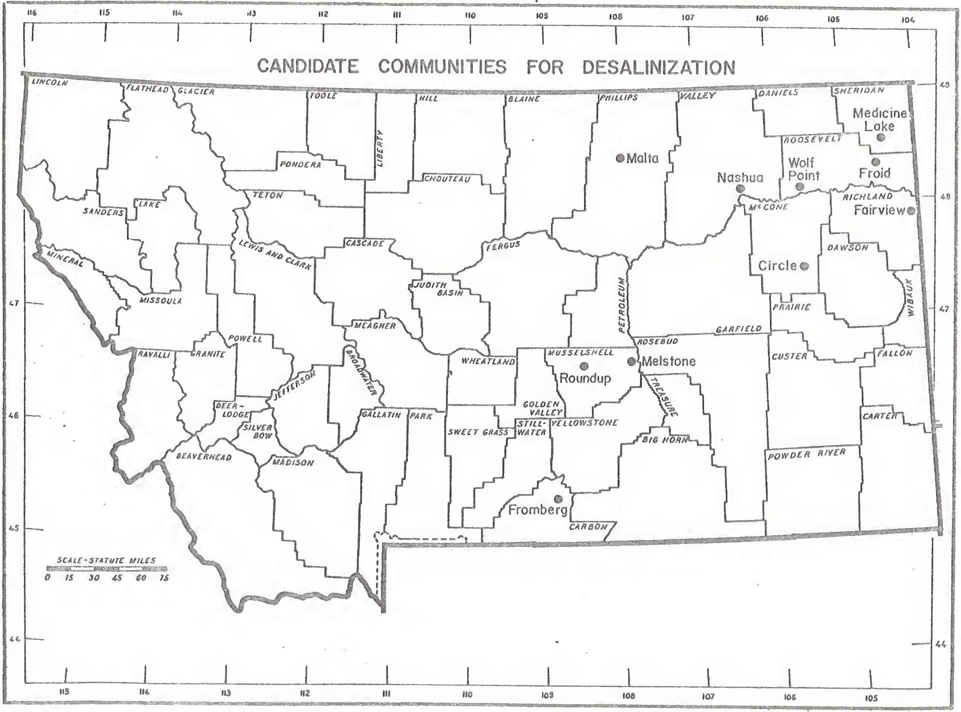
JEFFERSON
TREASURE
DEER-LODGE
GOLDEN VALLEY
GALLATIN
PARK
CARTER
SILVER BOW
STILL-WATER
YELLOWSTONE
SWEET GRASS
BIG HORN
BEAVERHEAD
MADISON
POWDER RIVER
CARBON
SCALE-STATUTE MILES
0 15 30 45 60 75
Counties published
Counties surveyed but not published
Counties not surveyed
116 115 114 113 112 111 110 109 108 107 106 105 104
49 48 47 46 45 44

APPENDIX E

MONTANA



MONTANA



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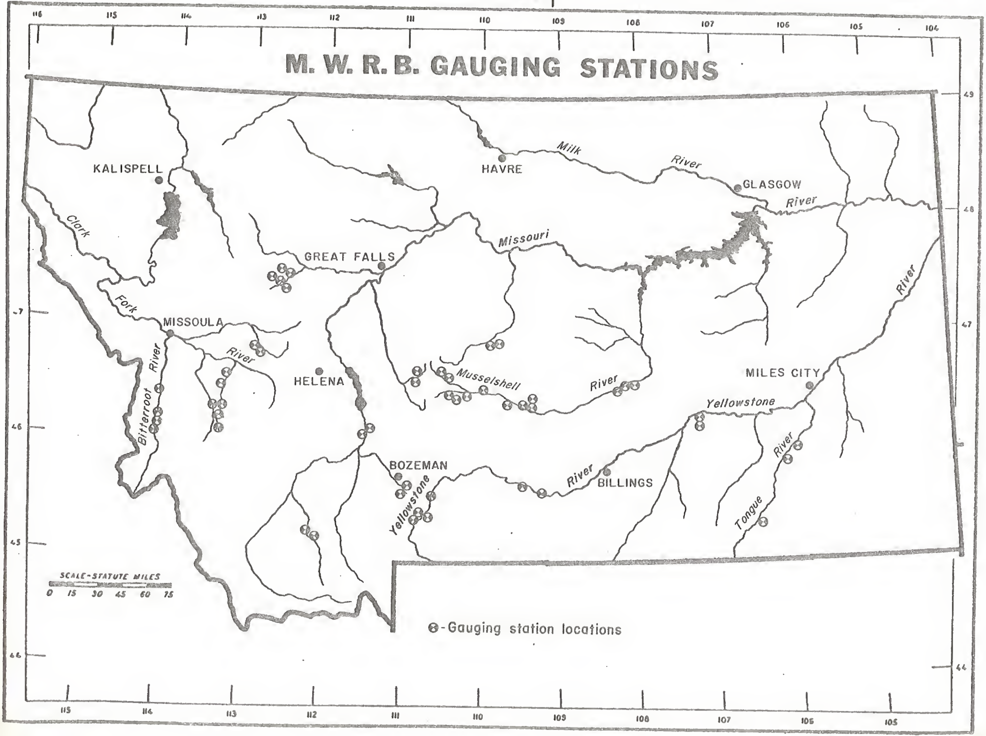
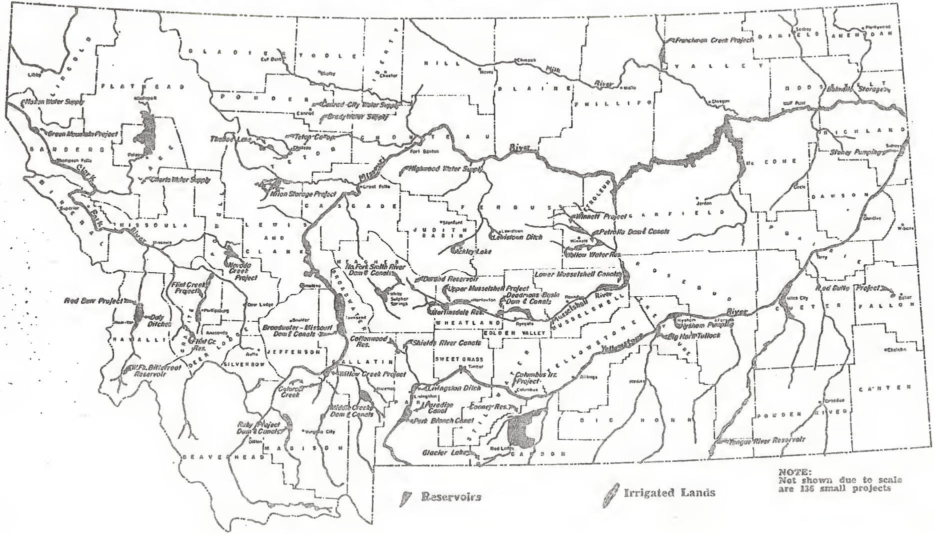
M. W. R. B. GAUGING STATIONS



MAJOR WATER RESOURCES BOARD PROJECTS



NOTE:
Not shown due to scale
are 136 small projects